

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/530,157

First Named Inventor: Gilad Almogy

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL REQUEST FOR REVIEW

Dear Sir:

Review of the final rejection in the above-identified application is requested. No amendments are being filed with this request. The Review is requested for the reasons stated on the attached sheets.

This request is being filed with a Notice of Appeal.

If there are any additional fees due in connection with this communication, please charge Deposit Account No. 19-3140.

Respectfully submitted,
SONNENSCHEIN NATH & ROSENTHAL LLP

Date: April 2, 2010

Tarek N. Fahmi

Tarek N. Fahmi
Reg. No. 41,402

P.O. Box 061080
Wacker Drive Station, Willis Tower
Chicago, Illinois 60606-1080
650-798-0342

STATEMENT IN SUPPORT OF PRE-APPEAL REQUEST FOR REVIEW

I. STATUS OF CLAIMS

Claims 26-31 and 34-36 are presently pending, have been finally rejected, and the subject of this Pre-Appeal Request for Review.

2. GROUNDS OF REJECTIONS TO BE REVIEWED

Claims 26-28, 30,34 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Charles et al., (U.S. Patent No.: 6,271,671, hereinafter “Charles”) in view of Alumot et al., (U.S. Patent No: 5,699,447, hereinafter “Alumot”).

Claims 29 and 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Charles in view of Alumot and in further view of The Product Description of a Lock Amplifier (Perkin Elmer Technical note, 2000, hereinafter “Perkin”).

Claim 35 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Charles in view of Alumot and in further view of EG&G Princeton applied research product description (“Explore the Lock-in Amplifier, 1983, hereinafter “Princeton”).

3. ARGUMENT

The rejections set forth in the Final Office Action are clearly erroneous.

Claim 26 is patentable at least because neither Charles nor Alumot, whether considered alone or in combination, teach or suggest means for providing an electrical signal having multiple phases to at least one conductor of a test structure and a processor for generating a first

image of the test structure during a first phase of the electrical signal based on detection signals received from the detector, generating a second image of the test structure during a second phase of the electrical signal based on detection signals received from the detector, and processing the first and second images to locate a defect in the test structure as required by claim 26.

Charles is directed to an improvement in multi-chip module (MCM) testability by using a new technique to detect on-substrate electric field strength. *Charles*, Abstract. “The electrical, mechanical and optical properties of the electro-optical dielectric layers are determined to investigate the effect of the poling and processing operations on the efficacy of the polyimide as both a dielectric layer and an electro-optic material suitable for laser probing.” *Id.*, Abstract.

Charles describes a process wherein a dielectric interlayer “in a multi-level thin film is converted into an electro-optic material by poling the device in a strong electric field. The change in the electro-optic coefficients of the chromophore-doped polyimide in the presence of electrical signals in the circuit can be detected using a laser beam. The electro-optic interaction between the poled dielectric and the laser beam allows the strength of the internal fields within the MCM to be determined as a function of position.” *Id.*, column 1, lines 20-33. Thus, Charles discloses a process of determining the strength of an internal field within an MCM as a function of position. However, Charles does not disclose providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by claim 26.

Alumot is cited for providing an “apparatus for inspecting the surface of chips and wafers for defects including a first and second phase... or scanning the incident substrate with a laser” and overcoming the deficiencies of Charles. Final Office Action, page 3.

Alumot discloses a dual-phase approach for inspecting the surface of an article, like a wafer or chip. *Alumot*, Abstract. The first phase includes optically examining the complete surface of the article by scanning its complete surface at a relatively high speed. *Id.* The second phase includes optically examining specific locations of the article where defects are suspected with a relatively high spatial resolution. *Id.* As such, the two-phase approach of Alumot refers to a first, relatively low-resolution optical examination of an article and a second, relatively high-resolution optical examination of a specific location of the article. Thus, the two-phase optical examination disclosed in Alumot refers to two phases of optical resolution for the inspection of an article and is in no way analogous to the system of claim 26 which is adapted to provide an electrical signal having multiple phases, generate a first image of the test structure during a first phase of the electrical signal, and generate a second image of the test structure during a second phase of the electrical signal. Hence, Alumot fails overcome the above noted deficiencies of Charles.

Thus, for at least these reasons, the cited prior art fails to teach or suggest each and every element of claim 26 and its dependent claims. Hence, claim 26 and its dependent claims are patentable over Charles, even when considered in combination with Alumot.

Claims 29 and 31 depend from claim 26 and are patentable over Charles and Alumot for at least the reasons provided above with regard to claim 26. Perkin is cited for providing a lock-in amplifier that provides an electrical signal that is both an AC and a DC current. However, even if true, Perkin fails to disclose or suggest providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by claim 26. Hence, for at least these reasons, Perkin fails to

overcome the above noted deficiencies of Charles and Alumot. Therefore, claims 29 and 31 are patentable over Charles and Alumot, even when considered in combination with Perkin.

Claim 35 depends from claim 26 and is patentable over Charles and Alumot for at least the reasons provided above with regard to claim 26. Princeton is cited for providing a lock-in amplifier with a frequency range limited to 0.1 Hz and 200 kHz. However, even if true, Princeton fails to teach or suggest providing an electrical signal having multiple phases, generating a first and second image of the test structure during a first and second phase of the electrical signal, respectively, and processing the first and second images to locate a defect in the test structure as required by claim 35. Hence, Princeton fails to overcome the above noted deficiencies of Charles, and Alumot. Therefore, for at least these reasons, neither Charles, Alumot, nor Princeton, whether considered alone, or in combination, teach or suggest each and every element of claim 35. Thus, claim 35 is patentable over the cited prior art.